**Surprising sources of mercury in Minnesota lakes**

DEAR WATERSHED EXPERT: What is the leading cause of water pollution in Minnesota?

DEAR WONDERING WATER-LOVER: You might be surprised to learn that mercury from the air is, by far, the leading source of pollution in our lakes and rivers. Ninety-nine percent of the mercury in our lakes and rivers comes from atmospheric deposition. This happens when mercury is released into the atmosphere during gold and iron mining, burning coal for electricity, and other industrial processes. The mercury eventually “falls out” of the air and onto our landscape; when it lands in lakes, the mercury ends up in the water and fish. There are approximately 1650 water bodies in Minnesota with too much mercury. As a result, the Minnesota Department of Health has issued fish consumption advisories for these lakes and rivers indicating that it may not be safe to eat fish from them more than once a week or once a month.

How is our state addressing the problem and what can you do to help?

Roughly 90% of the mercury in Minnesota lakes originates in other states and countries. The Minnesota Pollution Control Agency (MPCA) estimates that 40% comes from the continental U.S., southern Canada, and Mexico, 30% comes from other parts of the world, and 30% is due to volcanoes and other natural sources. You may be surprised to learn that artisanal and small-scale gold mining is the largest source of human-caused mercury emissions worldwide. In small mines and gold shops in many countries, elemental mercury is mixed with gold-containing materials to form a mercury-gold amalgam which can then be heated to extract the gold. Burning coal for energy is also a large source of atmospheric mercury.

According to the U.S. Environmental Protection Agency, in-utero exposure to methylmercury puts more than 75,000 newborns at risk for learning disabilities every year, in the U.S. alone. Mercury exposure can also damage the nervous system and organs of both children and adults. Because mercury comes from the atmosphere, we find water-quality impairments even in some of the most pristine lakes within the Boundary Waters. Mercury also bio-accumulates as it travels up the food chain, so mercury levels are highest in large walleye, northern pike, and other predatory fish.

Minnesota is a national leader in keeping mercury out of the environment, and was one of the first states to develop a statewide mercury-reduction plan in 2007. So far, our state has achieved a 70% reduction in mercury emissions by converting coal-burning power plants to natural gas, prohibiting mercury in dry-cell batteries, and engaging industrial partners. However, the amount of mercury generated by iron-mining operations in Minnesota has increased as production has picked up in recent years. In 2014, the Minnesota legislature established a rule required all iron mining and processing facilities to reduce their mercury emissions by 72% by 2025.

You can help to protect Minnesota’s lakes and rivers from mercury contamination by making a few simple changes around your home:

* **Reduce your electricity consumption.** Shut down your computer and monitor at night, switch to LED light bulbs, unplug idle electronics, and turn off the lights when you leave a room.
* **Dispose of household hazardous waste at an approved facility.** [Insert location here.] The mercury in thermostats, thermometers, fluorescent lights, gauges, medical and scientific equipment, electrical devices, and household appliances must be removed for reuse or recycling before these products can safely be disposed of or scrapped.

Learn more about the Minnesota mercury reduction plan at [www.pca.state.mn.us/water/statewide-mercury-reduction-plan](https://www.pca.state.mn.us/water/statewide-mercury-reduction-plan).

Find information on fish and safe eating guidelines at: [www.health.state.mn.us/fish](http://www.health.state.mn.us/fish).